UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,627	11/05/2003	Tae-Kwon Yoo	Q76246	4877

23373   7590   11/01/2006

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER
SAID, MANSOUR M

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/700,627	YOO, TAE-KWON
	Examiner	Art Unit	
	MANSOUR M. SAID	2629	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *17 August 2006*.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-11* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-3,5,6 and 8-11* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *8/17/06*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Response to Amendment

1.   **This Office Action is in response to the amendment filed on August 17, 2006.**

Drawings

2.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "**detection unit**" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3.   **The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   **Claims 1-3, 5-6 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hwang (6,337,682 B1).**

As to claim 1, Hwang teaches an apparatus for adjusting a sampling phase of a digital display, comprising (column 2, line 53 through column 3, line 23): a phase locked loop (PLL) circuit unit (figure 1, (40) for converting a frequency of a sampling clock signal and outputting a converted frequency, the sampling clock signal for converting an analog video signal into digital format (figures 1-3, column 3, lines 1-22, and column 5, lines 67); an analog to digital converter (ADC) (figure 1, (20)) for converting an incoming analog video signal into digital format using the sampling clock signal input from the PLL circuit unit to output a converted video signal (figures 1-3 and column 5, lines 15-67); a detection unit (figure 1, (70)) for detecting in a predetermined region a maximum phase shift of the converted video signal (figures 1-3, column 5, lines 40-67 and column 6, lines 1-51); and a control unit (figure 1, (60)) for controlling the PLL circuit unit so that the sampling phase can be adjusted in accordance with the maximum phase shift detected by the detection unit (figures 2-3, column 2, line 65 through column 3, line 15 and column 5, lines 28-67) .

As to claim 2, Hwang teaches wherein the detection unit detects a number of phase shifts exceeding a predetermined reference level within the predetermined region, and when

determining the number of phase shifts to be equal to, or greater than a predetermined value, detecting the maximum phase shift in the predetermined region (figures 2-3, column 5, lines 40-67 and column 6, lines 1-51).

As to claim 3, Hwang teaches wherein the detection unit comprises: a comparator (figure 1, (65)) that detects whether the converted video signal is varied to (figures 1-3, column 4, lines 19-37, column 5, lines 40-67 and column 6, lines 1-60), or above a predetermined reference level based on the comparison between the converted video signal from the ADC and the reference level (figures 1-3, column 2, lines 55-67, column 3, lines 1-22, column 4, lines 19-37, column 5, lines 40-67 and column 6, lines 1-60); a counter that detects the maximum phase shift by counting an output signal from the comparator; and a reference setting unit that inputs the predetermined reference level to the comparator for the comparison with the converted video signal (figures 2-3, column 2, lines 55-67, column 3, lines 1-22, column 4, lines 19-37, column 5, lines 40-67 and column 6, lines 1-60).

As to claim 5, Hwang teaches wherein the detection unit adjusts the sampling phase by computing one of 50% and 75% phases of entire checking region with respect to the maximum phase shift in accordance with a characteristic of the converted video signal (figures 2-3, column 2, lines 55-67, column 3, lines 1-22, column 4, lines 19-37, column 5, lines 40-67 and column 6, lines 1-60).

As to claim 6, Hwang teaches a method for adjusting a sampling phase of a digital display, comprising the steps of (column 2, line 53 through column 3, line 23): a) converting an incoming video signal in a predetermined region into a digital format to output a converted video signal, and analyzing the converted signal (figures 2-3, column 3, lines 1-22, and column 5, lines

67); b) determining whether a phase shift in the converted video signal analyzed in step a) varies

at or above a predetermined level, and occurs more frequently than a predetermined value

(figures 2-3, column 3, lines 1-22, and column 5, lines 67); c) if the phase shift is determined to

have occurred more frequently than the predetermined value, detecting a maximum phase shift of

the predetermined region (figures 2-3, column 2, line 65 through column 3, line 15 and column

5, lines 28-67); and d) adjusting the sampling phase in accordance with the maximum phase shift

detected in step (c) (figures 2-3, column 2, line 65 through column 3, line 15 and column 5, lines

28-67) .

As to claim 8, Hwang teaches wherein, after completion of the automatic sampling clock

within the predetermined region, the step c) detects a maximum phase shift of the input signal

while moving phase of pixel (figures 1-3, column 2, line 65 through column 3, line 15 and

column 5, lines 28-67).

As to claim 9, Hwang teaches wherein the step d) adjusts the sampling phase by

computing one of 50% and 75% phases of entire checking region with respect to the maximum

phase shift in accordance with a characteristic of the converted video signal (figures 1-3, column

2, lines 55-67, column 3, lines 1-22, column 4, lines 19-37, column 5, lines 40-67 and column 6,

lines 1-60).

As to claim 10, Hwang teaches wherein the detection unit receives the converted video

signal from the ADC (figures 2-3), (column 2, line 56 through column 3, line 20 and column 5,

lines 40-67).

As to claim 11, Hwang teaches wherein the predetermined region is a region in the converted video signal (figures 2-3), (column 2, line 56 through column 3, line 20 and column 5, lines 40-67).

Allowable Subject Matter

5.   **Claims 4 and 7 objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claim 4, "wherein the control unit, controls the detection unit to detect the maximum phase shift in another detection region based on a signal output from the detection unit indicating that the number of phase shifts exceeding the predetermined reference level is below the predetermined'.

As to claim 7, "wherein, if the phase shift exceeding the predetermined reference level is determined to have occurred less frequently than the predetermined value, changing a phase shift detection region, and returning to the step (a)".

Response to Arguments

6.   Applicant's arguments filed on August 17, 2006 have been fully considered but they are not persuasive. Applicant argued that the reference does not teach the claimed limitations, such as, "a detection unit for detecting in a predetermined region a maximum phase shift of the converted video signal".

However, Examiner respectfully disagrees for the following reasons; the claimed

limitation, the detection unit is not shown in the drawing, to support that "detecting in a

predetermine region a maximum phase shift of the converted video signal'. For instance, (figure

4, S40) discloses a program not a detection unit, which shows a "detect maximum variation step

while moving pixel phase".

Therefore, as best understood, Hwang teaches a detection unit for detecting in a

predetermined region a maximum phase shift of the converted video signal (figures 2-3, column

3, lines 1-49, column 5, lines 40-67 and column 6, lines 1-51)

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS OFFICE ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mansour M. Said whose telephone number is 571-272-7679. The

examiner can normally be reached on Monday through Thursday from 8:30-6:00 P.M. The

examiner can also be reached on alternate Friday from 8:30 a.m. to 5:00 p.m. EST. If attempts to

reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe

whose telephone number is 571-272-7681.

        Any response to this action should be mailed to:

                Commissioner of Patents and Trademarks

                Washington, D.C. 20231

        or faxed to: 571-273-8300 (for Technology Center 2600 only)

        Hand-delivered responses should be brought to the Customer Service Window at the

        Randolph Building, 401, Dulany Street, Alexandria, VA 22314.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be

obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mansour M. Said

10/27/06

                                                RICHARD HJERPE
                                                SUPERVISORY PATENT EXAMINER
                                                TECHNOLOGY CENTER 2600